

Translation

PATENT COOPERATION TREATY

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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference CFE030142/JMG | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/FR2003/003271 | International filing date (day/month/year) 03 novembre 2003 (03.11.2003) | Priority date (day/month/year) 08 novembre 2002 (08.11.2002) |
| International Patent Classification (IPC) or national classification and IPC G06K 9/00 | | |
| Applicant SAGEM SA | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☐ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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|--|---|
| Date of submission of the demand 27 mai 2004 (27.05.2004) | Date of completion of this report 05 April 2005 (05.04.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/003271

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

☐ the international application as originally filed.

☒ the description, pages 1-14, as originally filed,
pages _____, filed with the demand,
pages _____, filed with the letter of _____,
pages _____, filed with the letter of _____.

☒ the claims, Nos. _____, as originally filed,
Nos. _____, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. 1-4, filed with the letter of 17 February 2005 (17.02.2005),
Nos. _____, filed with the letter of _____.

☒ the drawings, sheets/fig 1/3-3/3, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig _____, filed with the letter of _____,
sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 1-4

because:

☒ the said international application, or the said claims Nos. 1-4
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____.

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

**Non-establishment of opinion with regard to novelty,
inventive step and industrial applicability**

1. The International Preliminary Examining Authority considers that claims 1 to 4 of the international application concern subject matter in respect of which it is not required to establish an international preliminary examination report pursuant to PCT Article 34(4)(a)(i), PCT Article 34(4)(b), and has decided in this case not to carry out such an examination of the claims in their present form.
 - 1.1 The subject matter of the claims concerns a human activity (PCT Rule 67.1(iii)).
 - 1.1.1 It is not specified that the method is carried out by a device such as a computer.
 - 1.1.2 The alleged invention, considered as a whole, concerns a method of identifying a person by image processing, i.e. an algorithmic method which could be carried out by a human being, using their brain to attempt to recognize the fingerprint of another human being by applying mathematical operations to the image of this fingerprint.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

- 1.1.3 The characterizing part of claim 1 explicitly concerns human actions ("one selects", "one supplies", "one converts").
- 1.1.4 The method does not provide a practical application having a tangible, concrete result (*PCT International Search and Preliminary Examination Guidelines*, 25 March 2004, "Appendix to Chapter 9", A9.07[1]).
2. Given that the description states that the invention concerns an automated process, assuming, first, that a human being has an intellect (intangible) making them more than an automaton and, second, that the claims will be amended (with the words "automated" and "process" being juxtaposed and the characterizing part redrafted accordingly), the Examining Authority agrees to carry out a preliminary examination of a hypothetical set of claims amended on the basis of the above assumptions.
- 2.1 Reference is made to the following document:
- D1: EP-A-0 617 919 (NIPPON ELECTRIC CO)
5 October 1994 (1994-10-05)
- 2.2 The application concerns the technical field of shape recognition and in particular the sub-field of fingerprint image pre-processing.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

2.3 The technical problem to be solved is that a fingerprint on a curved surface is deformed relative to a fingerprint on a flat surface.

2.4 The subject matter of independent claim 1 can be considered to involve an inventive step within the meaning of PCT Article 33(3).

2.4.1 D1, considered the closest prior art, discloses a device with a microprocessor that carries out a method of identifying a person by fingerprint recognition (column 1, lines 1 to 9; column 2, lines 1 to 11). The fingerprint is located on a curved optical plate that forms part of the device. The method converts the fingerprint coordinates into coordinates that match a fingerprint formed on a flat surface, which solves the technical problem.

2.4.2 The subject matter of claim 1 differs from D1 in that the claim mentions the following steps:
(1) selection of a pre-established model with a curved surface (semi-cylindrical, semi-conical);
(2) determining of the position of two diametrically opposite generatrices and deduction of the geometric characteristics of the surface.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

- 2.4.3 The objective technical problem is thus to process the prints found on non-predetermined surfaces.
- 2.4.4 Given that, in the prior art, the curved application surface is part of the detection device, a person skilled in the art would have seen no interest in adapting, and thus would not have been prompted to adapt, the prior art to surfaces other than that which already forms part of the device, such that the subject matter of claim 1 is not derived from the prior art in an obvious manner for a person skilled in the art.
- 2.5 The subject matter of dependent claims 2 to 4 contains the subject matter of independent claim 1, such that it is also considered to involve an inventive step within the meaning of PCT Article 33(3).

Further observations

- i. Claim 1 does not define the subject matter for which protection is sought and is unclear (PCT Article 6).
- i.1 The image of a ("recumbent") cylinder contains as many visible generatrices as this image contains lines. Similarly, the image of a cone

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

contains as many generatrices as its base contains pixels (viewed perpendicularly to the cone axis, page 8, lines 4 and 5, of the description). The number of visible pairs of diametrically opposite generatrices is thus equal to half the number of visible generatrices and is not unitary owing to the image resolution. It is thus essential to specify which are the generatrices whose positions are determined (claims, page 2, lines 2 and 3; description, page 9, lines 6 to 8; page 11, lines 5 and 6).

i.2 It is essential for the radius of the surface to be determined (equations, page 10) precisely (page 14, lines 5 to 7). This means that it is absolutely necessary to know the cutting plane to which the two generatrices of the visible edge of the surface correspond. The two possibilities envisaged (page 14, lines 11 to 25) are thus an essential feature of the invention.

i.3 The expression "with a distortion threshold lower than a predetermined threshold" (lines 30 and 31) is an attempt to define the invention by a desired result, whereas it appears possible to define the manner in which this result may be attained (*PCT International Search and Preliminary Examination Guidelines*, 5.35).

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Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

- ii. Concerning the adequacy of disclosure (PCT Article 5)

The description does not explain how the automatic means select a pre-established surface model. However, this is not a cause for an objection to be raised. In fact, after segmentation, shapes such as semi-cylinders and semi-cones appear as rectangles and triangles, shapes with whose recognition algorithms a person skilled in the art is very familiar.